GEOGRAPHIC SCHOOL BULLETINS

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Roman Chariots May Once Have Trundled Along This Road. Now It Echoes to the Buzz of Motor Scooters—Symbol of the New Italy

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its 1945 strength. Trolleys and busses, among the world's most modern, serve city dwellers better than ever before.

Italian roads have been rebuilt. A new 15-mile stretch of four-lane superhighway links Rome with the coastal town of Castel Fusano.

An electronics firm near Naples supplies U. S. and NATO forces with specialized military equipment as part of the offshore procurement program. So high is the quality of its products that the company fills orders for American plants.

Motor vehicles (including, again, the scooter) are Italy's number one export. Engineers have produced sleek-lined, powerful models that find ready buyers on the world market. Production has soared well ahead of 1938, with about a fifth of all Italian cars going overseas. They range from tiny "puddle-jumpers" to a turbine-driven racer with a speed of about 125 miles per hour and they will all be on view at this year's International Motor Show at Turin, another north Italy industrial center.

The textile business is back on its feet. A quarter of a million people work in the cotton industry. One woolen firm alone employs 13,500. Italian fashion designs rate so well that they took New York by storm. The French, fearful of their prestige as style setters, won't allow them to be seen at Paris shows. In the world of fashion, that's a high compliment.

Steel manufacture at the huge Cornigliano plant near Genoa got its start with the help of United States technicians. It now has a half-million-ton capacity. The chemical industry has one firm which boasts over 160 plants, many turning out such diversified new products as paint, synthetic perfumes, aluminum, and plastics.

Italian movie makers turn out 1,000 films a year, second only to the United States. Fans throughout the world idolize Italy's screen stars,

PUBLIFOTO FROM ITALIAN EMBASSY

A Towering Display of Cranes Marks the Annual Milan Fair. The Bustling Northern Italian City Boasts One of Europe's Most Important Industrial Exhibitions

Italy Scoots Along Recovery Road

With fat-tired wheels taken from a grocery cart and a one-cylinder engine from a power lawn mower, Italy has pieced together a snarling contraption that is leading it along recovery road. Sheathed in shining streamlines and with a crosswise seat in the rear for Signora, the modern motor scooter answers Europe's prayer for fast, economical transportation.

The sturdy, comfortable-riding two-wheeler cruises at about 35 miles per hour, gets 115 miles per gallon, and is being watched with interest by America's young motor enthusiasts who bought 20,000 from one Italian manufacturer last year.

Since 1946, Italy has produced a million motor scooters. The Piaggio company, near Genoa, aircraft manufacturers before the war, built the first 1,200 Vespas ("Wasps") in the hope of rescuing part of their crippled industry. Joyously, Italy and all Europe took the machine to its heart. Other manufacturers joined the field. Total production skyrocketed to 200,000 by 1950, over 300,000 by 1953, with the ceiling nowhere in sight. The Innocenti company of Milan, the largest producer, with sales branches in five countries, rolls 1,000 Lambretta scooters a day off its assembly lines—two a minute. The export trade gobbles most of Italy's production, for the scooter craze has spread as far as South America and Australia. Money earned by the little two-wheelers is helping to pay Italy's bills, has had a good deal to do with stabilizing the lira.

This smashing success story highlights Italy's current industrial upsurge. Ten years ago, at the close of World War II, its factory wheels had ground to a virtual halt. Lack of maintenance and dwindling stockpiles of raw materials silenced plants and machines which had escaped bombing. Restrictions of occupation forces throttled trade. Much of the railroad system lay in twisted ruins. In the industrial north—a fifth of the entire nation's area—a million unemployed workers roamed silent streets.

This April, a decade after VE-Day, the 33rd Milan Fair will open in Italy's second city. The former GI who remembers this old industrial center on the Lombard plain as a war-shattered wreck in 1945 will hardly believe his eyes when, as a tourist, he sees the fruits of Italy's new industry on display. He will goggle at new cars, gleaming under the bright spring sun, at typewriters, calculating machines, plastics, textiles, sewing machines, and chemicals, not to mention the ever-present motor scooter.

What is behind this industrial comeback? Italian hard work and ingenuity, coupled with generous American aid.

The first American dollars breathed life back into communications and transportation. Now there are more electric trains than before the war, taking their power from one of Europe's best developed hydroelectric systems. With new vessels like the luxury liner *Cristoforo Colombo* sliding down the Genoa ways, Italy's merchant marine has zoomed to ten times

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Children's Games Survive Test of Time

Place an ancient Roman on a modern American street, and he'd notice one familiar sight. The small boys in blue jeans and T-shirts would be playing catch just like the togaed youngsters of Rome.

Through all the centuries of history, the street games of children have changed little. Youths of long ago shot marbles. Their sisters played jackstones and a form of hopscotch. According to the picture on a Grecian vase, boys rolled hoops 2,500 years ago. Stone rings mounted on courtyard walls in Maya cities indicate an early form of basketball.

The Flemish artist, Pieter Breughel, depicted boys and girls playing leapfrog, follow-the-leader, crack-the-whip, guess-which-hand, and other favorite diversions in his painting "Children's Games." Some unruly youngsters are scuffling, some climbing and performing on parallel bars. One boy is stilt-walking, another riding a stick horse.

Breughel's scene could be any modern American playground. Yet its setting was Flanders in 1560.

Street games are not only timeless, but similar all over the world. Tag, hide-and-seek, and blindman's buff are found wherever children play. "Eenie, meenie, minie, mo" has its equivalent in several languages. This type of "counting out" is thought to go back to the ancient Druids who used strange formulas to select human sacrifices.

Other carefree games and songs sprang from grim origins. Tag represents flight from an evil spirit. "London Bridge is Falling Down" stems from an old superstition that bridges angered the river spirits. When children "trap" each other during this song, by bringing their locked hands down around a "victim," they suggest the primitive belief that only a sacrifice would appease the river.

Children imitate their elders in every society—savage or civilized. Their traditional games, passed down from generation to generation, throw light on the customs of yesterday.

"Here We Go Round the Mulberry Bush" reflects the ancient celebration of spring's arrival or May Day, when villagers gathered flowers and marched in procession. "Farmer in the Dell" originates in old courtship and marriage customs.

Always, parents have been worried about the hazards of rough-and-tumble play. King James I of England condemned football (soccer) as more suitable "for lameing than making able the users thereof."

Sounds like a modern American father, early in October.

MAYNARD OWEN WILLIAMS

Moslem Children Play "Knucklebones" on a Dusty Street in Distant Turkistan

critics cheer their performances. Hollywood has imported Italy's top talent.

The age-old crafts—pottery, glassware, sculpture—have not withered in this new era of science and engineering. Exports to the United States of Italian handcrafts are constantly increasing.

The rebirth of Italian industry has resulted in an over-all production at least half again as high as in 1939, the last "normal" year. Yet the nation faces, as it always has, a lack of natural resources—coal, petroleum, and, except for small deposits in Tuscany, iron ore.

Water power, as well as methane gas recently discovered in the marshes of the Po valley, partly compensates for the shortage of coal. Already 2,000 miles of pipe line are being laid to carry methane to industrial centers. Plans call for this supply to reach Turin, Milan, Genoa, Bologna, Trento, and Bolzano. Experts predict that there is enough of this natural gas to equal seven million tons of coal a year.

Iron ore, thanks to the Schuman Plan, now comes from the Ruhr duty-free. And Italy is lucky in being a volcanic country. Fumaroles, volcanic potholes, dot the Arno valley of Tuscany, providing a natural steam supply which runs generators. About a hundred of these steam deposits have been tapped in the last forty years. Their fluids yield borax, boric acid, bicarbonate, and ammoniate.

Although Italy's buzzing motor scooters have bounced over the southern part of the nation, the industrial prosperity they signify has not. Poverty still stalks hot, dry, southern Italy, where an estimated 2,000,000 remain without jobs. The Southern Italy Development Fund, established in 1950, aims at increasing water supply, housing, power, and transportation. A land reform program is under way.

Italy's population is growing fast. With 47 millions, it remains overcrowded and underemployed. But the strides of industry aim toward a new future.

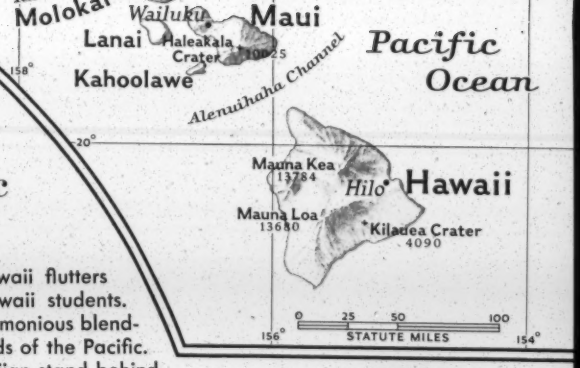
References—Italy appears on the National Geographic Society's map of Central Europe and the Mediterranean. Write the Society, Washington 6, D. C., for a price list of maps. "Italy Smiles Again," *National Geographic Magazine*, June, 1949; "A Stroll to Venice," September, 1951; GEOGRAPHIC SCHOOL BULLETINS, "More of Pompeii Comes to Light," April 5, 1954; Power plant, Larderello Valley (ill.), March 1, 1954; "Italy's Matera Cave Dwellers Find New Homes," Feb. 22, 1954; "Peoples of Many Lands Mark Columbus Day," Oct. 12, 1953. *School and library discount price for Magazine issues a year old or less, 50¢; through 1946, 65¢. Write for prices of earlier issues.*

NATIONAL GEOGRAPHIC PHOTOGRAPHER VOLKMAR WENTZEL

Italian Art Flourishes—This wood carver of Val Gardena maintains the religious traditions of Renaissance sculptors.

Metalware and wrought-iron work join the list of crafts which are fetching high prices in the United States.

Hawaii, Melting Pot of the Sunny Pacific



The flag of the Territory of Hawaii flutters over a group of University of Hawaii students. Their faces flash the story of the harmonious blending of diverse races at the crossroads of the Pacific. Blonde Caucasian and native Hawaiian stand behind Filipina, Chinese, Japanese, and Korean.

Fifty-seven years of United States tutelage have replaced Polynesian tribal life with an agriculturally and industrially rich modern democracy knocking at statehood's door. Hawaii's half-million people produce practically every can of pineapple you find on your grocer's shelves, as well as much of the sugar. Honolulu, a modern metropolis equaling Providence, Rhode Island, or Omaha, Nebraska, in size, was a collection of grass huts when Captain Cook, the islands' English discoverer, was killed in a skirmish with natives in 1779.

British and American missionaries and traders brought Christianity and Western modes of life to the "paradise of the Pacific," as well as leaving their marks on its flag-to-be. Chinese and Japanese arrived around 1850 to work on the sugar and pineapple plantations and in the canneries (right). Portuguese filtered in between 1877 and 1890, bringing their ukulele to harmonize with the soft strains of sweet Hawaiian music.

As Chinese and some Japanese left the plantations to become town merchants and professional people, Filipinos and Koreans took their places. Americans continued to pour in. Only one person in 10 is native Hawaiian.

Nothing could be finer than the climate these people enjoy. They wake up in a gentle 68 degrees, shop in a noonday 85, have their grass watered by a cooling 15-minute shower at six o'clock, and drop to sleep lulled by the rustle of palm leaves and the distant boom of surf on coral sands.

Some 78,000 tourists come from the United States mainland each year to see if it is really true. They pack famed Waikiki beach and support a half-million-dollar flower industry as they leave for home, decked in leis.

Those who fly get a cameolike view of the islands —tops of volcanic mountains jutting out of the warm blue Pacific. Great maws of live volcanoes gape up. High ridges diversify terrain and land use. Dry plains give way to well-watered plantations, and a spot on one island—Kauai—ranks as one of the wettest on earth. Kauai's industries (next page) reflect those of better-known and more populous Oahu.

NATIONAL GEOGRAPHIC MAPS
PHOTOGRAPHS BY NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

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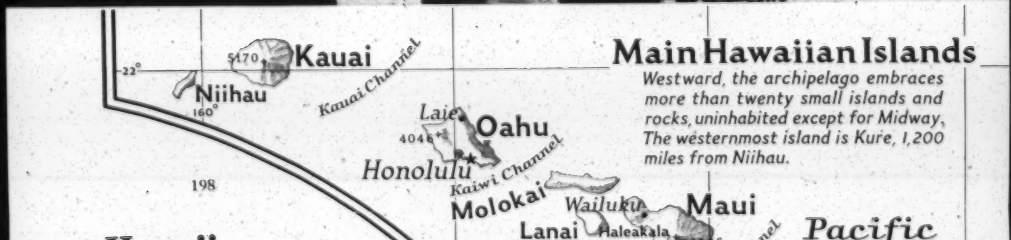


Main Hawaiian Islands

Westward, the archipelago embraces more than twenty small islands and rocks, uninhabited except for Midway, The westernmost island is Kure, 1,200 miles from Niihau.

Rails Spanned Panama Isthmus 100 Years Ago

"On the twenty-seventh day of January, 1855, at midnight, in darkness and rain, the last rail was laid, and on the following day a locomotive passed from ocean to ocean." So simply has been described the climactic moments of an epic of American railroading—spanning the Isthmus of Panama.

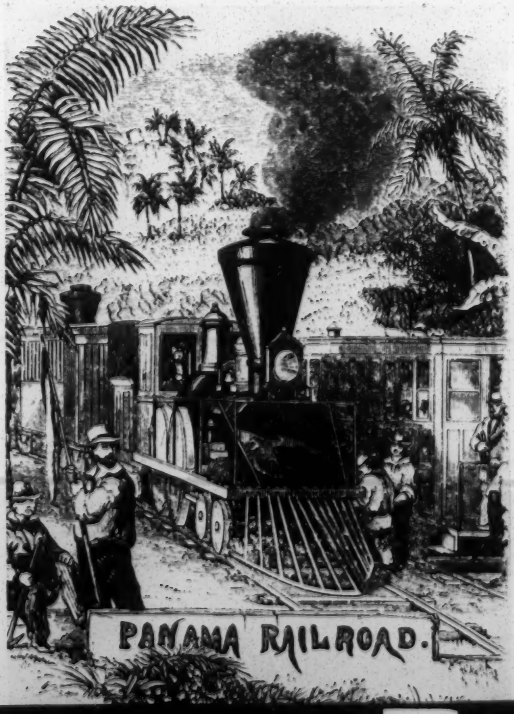
The dream of a route across the narrow waist began with Columbus and Balboa. In 1527, Holy Roman Emperor Charles V, King of Spain, showed interest in "uniting the two seas." Soon Pizarro passed through Panama on his way to the conquest of Peru, and Inca treasure flowed back.

The riches of the Andes drew Spain's enemies like a magnet. Time and again they slashed at the Panama route—exposed jugular vein of empire. Pirate bands ranged the isthmus to ambush mule trains on twisting jungle trails. Along the Spanish Main, rakish corsairs under the Jolly Roger pounced on lofty galleons flying the rampant lions of Castile. Elizabethan sea dog Francis Drake plundered strongholds and, in 1671, Henry Morgan sacked the capital itself, carrying away 195 mule loads of booty. Spanish galleons began threading the remote and stormy Strait of Magellan to and from Peru to escape the marauders.

In the mid-19th century the California gold rush brought sleeping Panama to life. Gold seekers from eastern United States sliced 9,000 miles from the arduous 14,000-mile voyage around Cape Horn by using the Panama shortcut. Ships of every description converged on the mouth of the Chagres River. Hulks were left to rot as captain and crew piled ashore to join passengers in the mad race for the gold fields.

Natives poled and paddled the travelers up the Chagres in overcrowded *piraguas*, or dugout canoes, 46 miles to Cruces. From there, by mule, carried in chairs on the backs of porters, or afoot, they crossed the divide, following 18 miles of treacherous jungle trail worn by the hooves of Spanish treasure trains.

Hardships suffered in the headlong rush caused farsighted men to speed work planning the Panama Railroad. In May, 1849, a team of engineers completed the preliminary survey. Au-



Opening the Transisthmus Line in 1855—This woodburner graces the new three-cent Panama Canal Zone stamp commemorating the railroad's 100th anniversary. The line links the cities of Colón and Panamá.

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NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

Pineapple and Tuna for the Nation's Pantry—A ponderous "harvester" clanks through a field on Kauai while walking pickers place pineapples on the conveyor arm. The hopper loaded, it drops seven tons of fruit into a cannery-bound truck. Below, 50 miles off Kauai, fishermen of Japanese descent bring in fighting tuna. For full information about the territory that outdoes the U. S. as a melting pot, see "Honolulu, Mid-Ocean Capital," in the May, 1954, *National Geographic Magazine.*

HOWELL WALKER, NATIONAL GEOGRAPHIC STAFF

side-wheelers took shelter opposite Manzanillo. Impatient passengers clamored to ride the construction trains inland. To discourage them, the superintendent set an absurdly high fare. His eyes popped as more than a thousand men clambered aboard a string of flatcars, leaving him some $7,000 richer. After that a steady stream of California-bound passengers chuffing over the short stretch of track yielded a small fortune. Wall Street snapped up a new $4,000,000 stock issue.

NATIONAL GEOGRAPHIC MAP

Key Location of Panama's Narrow Waist Makes It a Focus of World Trade Routes

The 1852 cholera epidemic ravaged the land and thinned the railroad's ranks, killing the company's president. Cattle boats barnstormed for labor all over the world. By the time the railroad tooted across the Chagres on the world's largest wooden trestle, fever had taken most of the Europeans. The Chinese contingent fared badly, many committing suicide.

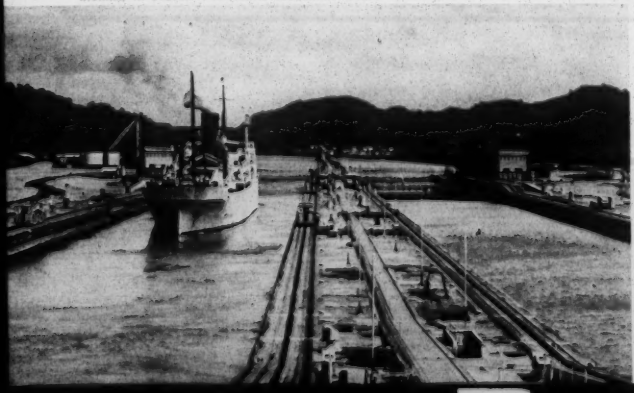
Caribbean recruits took over, and in January, 1854, the track crossed the continental divide. Twelve months labor and 11 miles of track later came that momentous night one hundred years ago when the final rail was spiked in place, and the world's first tropical railroad became a reality, the Atlantic and Pacific but several hours apart.

The 47 miles of track cost $8,000,000—eight times the estimate. But the line was a roaring financial success. Its rates stayed outrageously high. In 1855, its first year of operation, the railroad's 24 percent in dividends pushed its stock to first position on the New York Stock Exchange. Four years later, the directors declared a 40-percent dividend; in 1868—the peak year—a phenomenal 44 percent.

Then, four months later, the golden spike was driven at Promontory Point, Utah, joining the Central Pacific and Union Pacific tracks into a single transcontinental route. The California trade monopoly of the little line along the Chagres was shattered, and with it the greatest prosperity ever known by a railroad.

The railroad's "two streaks of rust" found work under French ownership during two ill-fated endeavors to build a transoceanic canal. In 1904 the United States acquired the railroad from the French to serve in the construction of its canal. Much of it was rerouted, and though today the Panama Railroad continues a useful adjunct, its heyday is past.

RICHARD H. STEWART, NATIONAL GEOGRAPHIC STAFF



References—Panama appears on the Society's map of the Countries of the Caribbean. "Panama, Bridge of the World," *National Geographic Magazine*, Nov., 1941; "Hunting Prehistory in Panama Jungles," Aug., 1953.

Panama's Watery Elevators—Six sets of locks raise, lower ships 85 feet during the 50-mile canal passage.

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NATIONAL GEOGRAPHIC PHOTOGRAPHER RICHARD H. STEWART

Muscle, Dugout, and Paddle Still Play Key Transport Role in Parts of Panama

thor-explorer John L. Stephens obtained the railroad concession from the government of Nueva Granada (Colombia), of which Panama was then a part. His partner, New York merchant and shipping magnate William H. Aspinwall, raised $1,000,000.

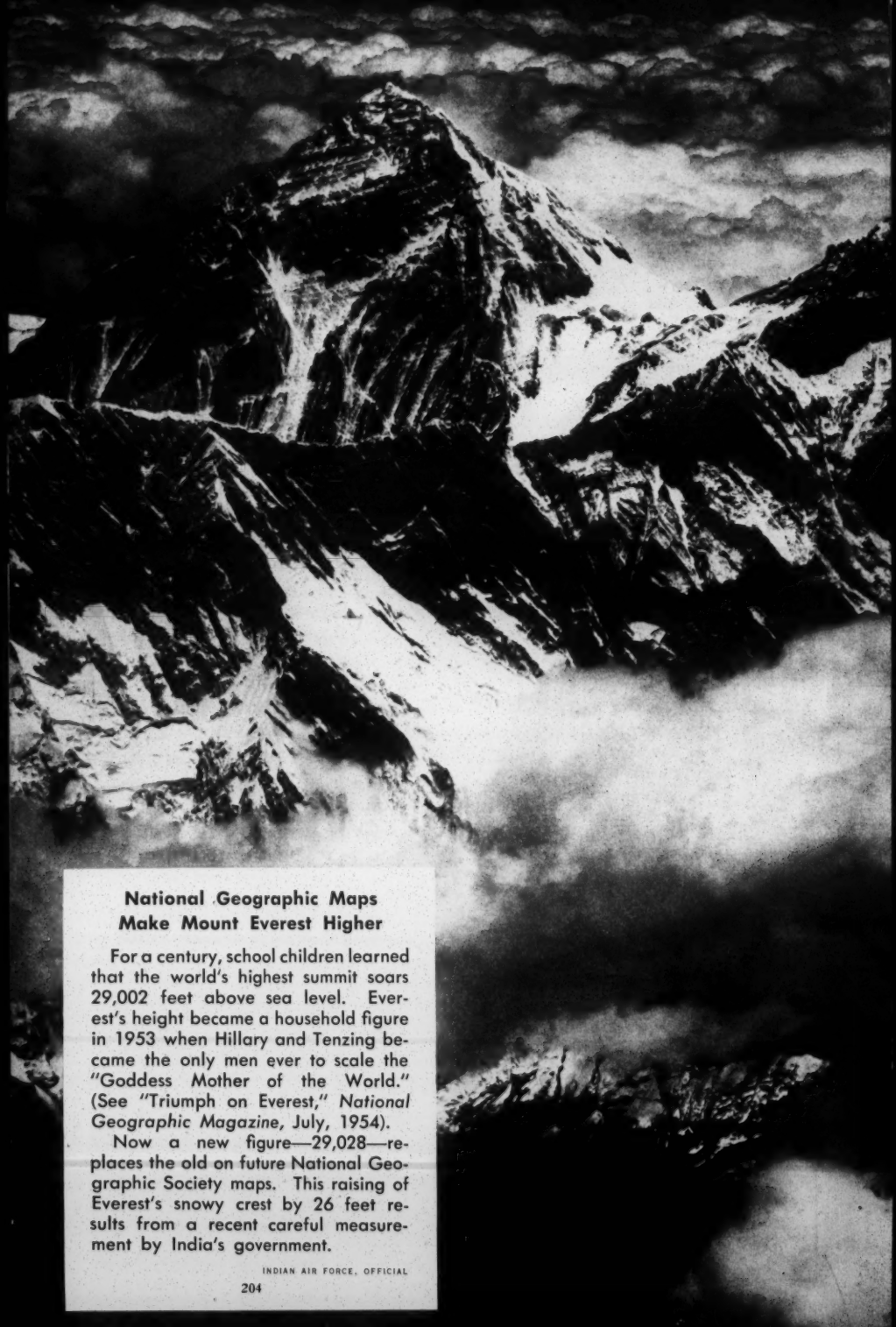
The first setback came when a speculator bought up land intended for the Atlantic terminal. His outrageous price drove the company to shift its prospective terminal 7½ miles up the coast to the swamps of Manzanillo Island—site of present-day Colón, Panama's second city.

Crocodiles watched from the ooze when the first workers arrived at Manzanillo Island in May, 1850. With no dry spot to put up their tents, next day they towed a leaky brigantine hulk from Chagres to serve as quarters. Workers deserted. Men dropped in their tracks as they began clearing tide-washed mangrove swamps. At night they tossed deliriously with chills and fever. Bugs and spiders drove them out on deck. Mosquitoes drove them back.

Wages soared. More workers streamed in. Men slogged ahead waist-deep in slime. Equipment arrived and work started on the roadbed. The bog swallowed shipload after shipload of rock ballast with little discernible effect. At one point the foreman sounded the swamp and found solid earth 180 feet below. His crew dumped 3,000 tons of fill in the spot and it still tested 180 feet!

The work progressed by inches. A causeway was filled in to the mainland. By April, 1851, the rails reached to the bank of the Chagres at Gatun. But these seven miles of track had cost more than the entire original $1,000,000. Stock went begging at 10 cents on the dollar. The line would have died there but for an amazing stroke of luck.

Forced away from the exposed Chagres roadstead by a storm, two



National Geographic Maps Make Mount Everest Higher

For a century, school children learned that the world's highest summit soars 29,002 feet above sea level. Everest's height became a household figure in 1953 when Hillary and Tenzing became the only men ever to scale the "Goddess Mother of the World." (See "Triumph on Everest," *National Geographic Magazine*, July, 1954).

Now a new figure—29,028—replaces the old on future National Geographic Society maps. This raising of Everest's snowy crest by 26 feet results from a recent careful measurement by India's government.

INDIAN AIR FORCE, OFFICIAL